"SELLING" REORGANIZATION TO SME'S FINANCIAL MANAGEMENT THROUGH ERP IMPLEMENTATION

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Abstract: Small and medium enterprises (SMEs) have been receiving less focus from the software vendors than large enterprises (LEs). Research on the implementation of ERP in certain European countries shows that the job of implementing an Enterprise Resource Planning package (ERP) is a riskier business for SMEs than for LEs. This paper presents a methodology for efficient implementation of ERP solutions by delegating the main project leadership roles to an experienced consultant. Finally, a case study is presented with proposed implementation steps. The steps taken in this project, if proven on some additional projects with SMEs could become basis for a more formalized set of activities, or even a methodology.

1 INTRODUCTION

This paper describes a suggestion of how to "sell" the idea of restructuring the organization for a small to medium company that needs to implement a new ERP. The paper also argues for an independent person in charge of the entire process of selecting, acquiring and implementing new enterprise information system in a SME. The arguments for that are given by showing typical characteristics and behaviour of SMEs in the process of acquiring a new software solution, and by analyzing the typical problems encountered in real life projects. Additionally, typical business interests of all parties involved are analyzed. The most obvious shortcoming of SMEs compared to large companies is the lack of in-house resources. Therefore, the knowledge the software project management should be outsourced.

The process of restructuring SME often appears to be natural, because of dynamic environment in which they operate. It is often not recognized as such, and not controlled adequately. The decision to purchase an ERP package to support the business processes can be a good opportunity to formalize the process of reorganization.

An overview of research in the area of ERP implementation in the SME sector is given, and a successful practice described, that could evolve into a methodology, after being proven successful and tuned on few additional real-life cases.

2 ERP

An Enterprise Resource Planning (ERP) system is a software platform, providing best ways to do the business based on common business practices or academic theory. The aim of an ERP is to improve the co-operation and interaction between all departments in organisations (such as product planning, manufacturing, purchasing, marketing and customer service department). As an enabling key technology, as well as being an effective managerial tool, ERP allow companies to integrate at all levels and to utilise important ERP applications such as accounting and financial management, supply-chain management (SCM), human resources management (HRM) and customer relationship management (CRM). Such applications represent large, complex, computerised and integrated information systems which can strongly influence long-term business success (Bernroider, 2003).

A precedent of today's ERP systems are the Materials Requirement Planning Systems, (MRP) from the 70's which automated production planning and management process, by scheduling operations and material purchasing based on the forecasted and current requirements of finished goods, and the constraints of the production facility. Manufacturing Resources Planning (MRP-II) systems in the 80's coordinated the entire process, from planning the purchase of materials and parts, requirements-based production capacity planning, to distribution. The term ERP was first used by Gartner Group in the early 90's, and included multiple applications that automated parts of business (MRP-II, CAD, CAM, CAE, financial modules). The aim of ERP is to manage business processes within the organization.

The market for ERP solutions is constantly growing, and the license and maintenance revenue from the ERP market was 17,2 billion USD in 1998 and was expected to rise to 24,3 billion USD by the year 2000 (Fertalj, 2003) with its today's value in tens of billions of USD. In addition to a few global market players, that offer complex solutions configurable for specific needs, there are many local vendors with less sophisticated applications that are usually programmatically modified for a particular user.

In recent years, most ERP system suppliers have increased their focus on small and medium enterprises. There are some reasons for this trend including a saturation of the market as most large organizations have already implemented an ERP solution, increasing possibilities and need for the integration of systems between organizations and the availability of relatively inexpensive hardware. (Sarpola, 2003)

Their offer for SMEs is either their original application with reduced functionality, or a completely new package branded for SMEs (mySAP, Oracle Small Business Suite, Navision).

3 SME

There are different definitions of medium-sized enterprises, depending which of their aspects is being considered. The European commission defines SMEs as the companies that have fewer than 250 employees, and either, an annual turnover of less than 40 M€ or an annual balance-sheet total of less than 27 M€ (Commission, 2003), and are conforming to certain criterions of independence.

This definition is not precise enough for our needs, as we are looking for organizational size and complexity of processes. For instance, an insurance company of 250 employees might be too complex for the scope of this work, while a mid-sized services company that employs 200 workers, with an administration of 10 people may be too simple to gain any benefits from ERP introduction. Also, local government organizations, which have "non-typical" activities that are not related to profit, usually have a different approach when automating their work. Reorganization in such companies often has political, rather than profit-oriented objectives, so a different logic might apply.

An "ideal" SME that is considered in this paper is the one that:
• Evolved to its present size in a competitive environment.
• Has a sufficiently complex organizational structure, with at least main processes defined. There must be processes to improve, or information to integrate. If the organization is small enough that one person is capable of controlling most information that enters the company, implementing of an ERP may not be worth the effort. Companies with extremely simple processes where a few people create information, may only need a simple solution and a basic training from the software vendor to use it. The system compulsorily encompasses a financial package, maybe a stock management package and similar primarily financial functionalities.
• Preferably not in a market position where it is not forced to change, i.e. not an unchallenged absolute market leader. Preferably there is relatively strong competitive pressure from other players on the market. Such companies usually have a "healthy" motivation to improve and create a competitive advantage. However, there can be other strong and valid motivators, like being taken over, losing market share, downsizing, etc.

4 WHY ERP

The need for an ERP is usually recognized when companies encounter business problems that are related to the flow of information. Often too much effort and time is needed to collect and compile relevant information, resulting in inadequate management decisions based on that information.

At this point company's management usually approaches some known software vendors, asking for a presentation of their product. Those presentations often emphasize product features, and tend to ignore the issue of the implementation

process which is heavily dependent on various factors (organizational, business culture, etc.), specific for each particular company. The company's management is left to make a decision based on too few parameters learned from the presentations. In this course of events they are often unaware of the issues that will arise later.

In the case of SMEs, most often a decision to purchase Commercial Off the Shelf (COTS) product is made to reduce cost and finish the implementation as quickly as possible.

A Study on Austrian SMEs in 2005 shows that the penetration of ERP in SMEs compared to LEs is still rather low, (22,5% of SMEs have ERP, as opposed to 71,1% of LEs)(Bernroider, 2005).

5 BUILD VERSUS BUY DILEMMA

Today there exist many open-source and COTS solutions covering almost any area of business. Due to the economies of scale, these solutions cost less than developing a custom solution from scratch. The obvious benefit is the possibility to cover most functionality required in a short time, with a tested solution. There are disadvantages, such as less control over the code, less certainty of how a component will behave in an integrated environment or dependence on different vendors. Furthermore, it is usually not recommended to make changes in the COTS source code, or even to force the vendor to make them, because there may be issues of compatibility with the future versions. New versions of a COTS component of purchased application should be carefully tested before being implemented. Also, all of the required functionalities may not be available in any of the COTS or open-source product on the market, so there should be a degree of flexibility, and an iterative approach while matching system requirements with COTS components that can be put to work together. Although a list of disadvantages seems longer than a list of advantages, most of them can be dealt with by having an efficient selection and implementation process in place.

6 SOFTWARE ACQUISITION

Methodologies for selection of software vendors exist, but are mostly aimed at large organizations, and usually rather complex and time-consuming to implement. In most cases they are inappropriate for a small organization to follow.

The software selection process has been formalized on different levels, depending on the exact objectives, and the complexity and "life expectancy" of the application selected. Most methods have been developed for large organizations, and the ones with high risks involved, namely military or government. One of the ideas is to evaluate not the existing software package itself, but the capability of the manufacturer to produce demanded software, implemented in the CMM-based SCE methodology, used for the selection of software suppliers (Barbour, 2005). However, SCE is used for projects of $10M+, the ones lasting more than 2 years.

Behaviour of companies when buying software has been researched, and SMEs were compared to LEs. One research comparing behaviour of Austrian SMEs and large companies when purchasing software (Bernroider, 2000) showed that SMEs by far most value Adaptability and Flexibility, followed by Good Support and Short Implementation Time. These characteristics are also positioned high in the priorities of large companies, but there are also Process Improvement, Increased Organizational Flexibility, and Increased Customer Satisfaction. The research also shows that large companies have a more structured approach to purchasing software, rely more on external consultants etc, and spend more time specifying their needs.

Usually, the need for new software is recognized when the company has grown quickly, and the old manual business procedures are not efficient enough. The transition from a "small" to a "medium" organization is a known process with some common trends, mostly organizational. This is risky enough itself, and many companies don't deal with it well.

A characteristic of medium-sized companies which has not been investigated thoroughly enough is the personal connections between most employees, which have remained from the period of being small, and which can be a disturbance while making unpopular decisions. Large companies are usually more divided both horizontally and vertically, so the people making decisions usually have less personal connections with those affected.

LEs plan the software implementation with long-term goals in mind. SMEs, on the other hand decide to buy software to solve a particular problem on hand. The strong request on "Adaptability and Flexibility" (Bernroider, 2003) merely means that they want the ERP they buy today to be useful in the future, as they expect more organizational changes

to come. The expectation of flexibility is difficult to satisfy as they often do not know what they will need in future.

Because of a more systematic approach to software purchasing, more sophisticated expectations, and willingness to spend more money and time on preparation, one could expect that large companies will be less disappointed in the end result.

7 IMPLEMENTING OF SOFTWARE

Implementation of any complex software solution is associated with various risks. Research (Bernroider, 2003) shows that on average, only 80% of planned functionality is obtained after ERP implementation, 90% ERP implementation projects are late or over budget (Sarpola, 2003), 40% end up with only a partial implementation, and 20% of all projects in 1999 were discarded as total failures.

A comparison between SMEs and LEs showing differences in approach, commitment, and results of ERP implementation says that SMEs prefer slow-phased implementation, as opposed to LE's that prefer implementations consisting of a pilot project and the rest in a single step. SME's experience more business trouble while implementing ERP (ERP does not work as expected in 65% of cases, 70% experience a short decline in performance). (Bernroider, 2005) SMEs more often implement SCM and CRM along with ERP. In general, one could say that SMEs have a more opportunistic approach to ERP implementation and poorer project management, which results in more unsatisfying outcomes. On a positive side, SMEs are simpler and more flexible, so even a really poor ERP implementation does not inflict permanent damage.

LEs are generally more satisfied with the outcome of ERP implementation, have more defined goals and manage projects better. Relying more on consultant knowledge makes them more vulnerable when these leave the company. On the other hand, risks for LEs in case of failure are greater, so 2,2% of them never recover from a poor ERP implementation. branded for SMEs (mySAP, Oracle Small Business Suite, Navision).

8 CONFLICTING INTERESTS

From the authors' experience, the actions to follow often miss the opportunity to efficiently reorganize the company. This is due to discrepancy of interests of the parties involved. The agreed price of a complete ERP usually includes licenses, installation, implementation and start of exploitation. The conditions of software maintenance usually define an "assumed" monthly level of service that includes minor modifications, solving technical difficulties, managing data consistence and security, periodical (annual) interventions, and often, supporting changing requirements due to changes in legislation. Major changes are defined as separate projects which are agreed and charged separately.

Consequently, the interest of the software implementer is to install the basic functionalities as quickly and with as few problems as possible, leaving enough room for future major improvements. The skill of the vendor here is to balance with the customer satisfaction, and need for improvements to maximize profit over time. An ideal customer would be the one that constantly undertakes major changes in the software.

One could argue that a solution that would quickly and drastically improve the customer's way of functioning, without a need for constant software improvements, would not be in the software company's best interest.

Furthermore, if there is a solution on the market that could be easily integrated with the ERP and improve functionality (which is often the case today with collaboration and document management applications), the software vendor might not suggest it, but rather try to develop the required functionality, at a much higher cost in terms of both time and money.

9 NEED FOR AN INTERMEDIARY

SMEs on the other hand often do not know what is best for them. Because of lack in internal resources and a quickly changing environment, SMEs need a third party leading the project of implementation. Project leader in this case must perform some major activities, as follows.

- Drawing-up the current state of organization, defining business processes and workflow procedures.
- Motivating management to define company's strategy that can be put into action through reorganization and ERP implementation.
- Define the new organization, using the right amount of formalism. Because of the "ad-hoc"

nature of SMEs compared to large companies, a complex procedure of reorganization that involves lots of administration defining, measuring, and executing changes may discourage the management, who might see these activities as wasting of time.

- Defining hardware requirements, overseeing purchase and taking care of time constraints.
- Staying in constant contact with the sponsor (management) defining problems and seeking support for their resolution. Being an outsider to the company, there is a big "political" task to perform, to gain credibility with both the employees and the management.
- Acting as the project leader towards the software manufacturer, specifying needs and overseeing execution of agreed work. Being directly involved in follow-up of all planned activities, as there is usually no one else to take care of it. This involves breaking down a big plan to individualized tasks, organizing training for employees, tracking their progress.
- Organizing the follow-up meetings between management, software producer and key users in the company.

There are usually people within the company who are able to perform some of even all of these tasks, but it is a full-time job to coordinate them and impartially suggest even unpopular decisions.

10 RISKS REGARDING CONSULTANTS

The typical risks of hiring a consultant are that he or she may not be acquainted with the specifics of a particular company. There may not be enough experience in one or more of the fields that need to be covered by only one person. The assumption that the processes in SMEs are lots simpler than the ones at LEs, and that one experienced person should be able to keep everything under control, may not always be valid.

There is also a problem of non-aligned interests of the external consultant, with the ones of the SME. Great care should be taken when defining external consultant's objectives, in making them dependent of the company's overall success, as well as the success of the ERP project. There are many examples, although mostly with LEs, of failures that can be attributed to external consultants. (Scott, 1999).

The advice would be to tie consultant's compensation to the attained goals (percentage of

growth in a period, timeliness of the ERP project execution, reduction of order processing time) or even define penalties if such goals are not met. Also, there should be a careful screening for the consultant's previous experiences, where one should seek for those who were successful in similar projects, and who have a necessary broadness. For example, a consultant who managed a very big project with many people involved might not be adequate for a small company's project where there are lots of operative work to be done, and less delegation of duties. There exist professional associations that can be contacted for this purpose.

11 CASE STUDY

The authors recently conducted an ERP implementation in a Croatian medium-sized construction company. In order to improve its financial management, a better control over labour and materials cost and scheduling of construction projects were required. A need for reorganization was apparent to an outsider, as the company dropped in size from 1.500 to 150 employees, still keeping a similar organizational structure. As the project progressed and the information from the ERP became available, it triggered other changes, some voluntary and some imposed by the management. In order to take this approach, a flexible ERP was needed that could automate "the old way" in the beginning, but could be configurable to follow the changes in business processes.

Following is the sequence of activities that were proposed to the management by the authors, and were generally accepted.

- Purchase the software to solve the problem on hand.
- Automate the support functions. Start with the ones that are already most automated, such as Finances, Purchasing, Warehouse, HR. The idea was to first do the job that will require least effort, with the most visible effects. The idea is to rely heavily on support of the software vendor's team, while not allowing them to dictate dynamics of implementation. A successful first phase will give the project manager credibility needed to address the main issue, automating the core business.
- Expose the people from core business activities to the new system. It is important to bear in mind that implementing an ERP will definitely lead to changes in the way people work. People from the core activity have an enormous power to stop or

sabotage the efforts, with an argument that the new system, would temporarily slow down the production. The success of implementing a software in the core activity lies in slowly dosing the good and the bad things, good things being less work needed, more accurate and timely information available, better communication in the value chain. Bad things are getting used to the new software, dealing with the software instability, changing the way of working, and most importantly, shifting of positions of power within the department. With the new software in place, the ones who get used to it more quickly are in better position. Usually it is the younger and the more technically oriented employees. However, one must understand the difference between software skills and real skills that add value to the process, because sometimes older and more experienced people are unfairly disregarded in this process, which turns into a loss for the company. An extreme example from the real life is employing a young person to do the typing for an older key technical engineer who resists accepting to use the computer. There are also opposite examples – employing of a young inexperienced person to perform consulting in complex environment.

• With the help of the sponsor, set goals for core activities. Before this is done, one must make sure that there is enough knowledge of the new system in the core business activity. If possible, the suggestion is not to have sudden changes, but to let the new way of working take over the old way. This way there is always an alternative in case of problems with the new system, which gives additional security to those involved in the transition. This could for example mean following one or more construction sites through software, while others are followed the old way, or automating production of one line of products. The idea is not to break the existing process with the new way of working if not necessary. After the first cycle is completed, or nears the end (one building, or one yacht assembled and delivered) there will be enough data to analyze and to convince the management to start reorganization.

12 CONCLUSIONS

Small and medium sized enterprises represent a very large potential market for ERP solutions. Specific approaches should be developed to use the benefits of a comprehensive solution such as an ERP, and to minimize the negative impacts, mostly arising from their complexity and high expectations on security.

Due to lack of proprietary resources, and a faster pace of changes that SMEs undergo, one must find a way to implement software as simply, and with as few additional resources, as possible.

Emphasis should be given to the "natural flow" of things, at first maybe even "automating the old way", and as the organization matures, changing the business processes accordingly. The ERP systems used by SMEs should be flexible, even able to purposefully reduce the information security for the benefit of ease of implementation. Once the situation is stabilized, the security of information can be raised again. Use of COTS solutions should minimize the cost of development, at the expense of the cost of systems integration.

Another high demand is for the project manager, who should be skilled in many areas, such as business, change management, training, information security and IT systems integration. Of course, one cannot be expert in all of these areas, but must be able to manage them, engaging specialists for specific tasks if needed.

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